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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/506,717	02/18/2000	Harold E Helson	103544.127	9161
7590	05/28/2004		EXAMINER	
Jason A Reyes1 Hale and Dorr LLP 60 State street Boston, MA 02109			MARSCHEL, ARDIN H	
			ART UNIT	PAPER NUMBER
			1631	

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
09/506,717	HELSON, HAROLD E	
Examiner	Art Unit	
Ardin Marschel	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 23 April 2004.
2a) This action is FINAL. 2b) This action is non-final.
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 5-16 and 19-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 5-16 and 19-21 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____.

DETAILED ACTION

Applicant's arguments, filed 4/23/04, have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

The Notice of Appeal, filed via Certificate of Mailing on 10/23/03, is deemed moot due to the mailing of the previous Non-final Office action, mailed 10/23/03, which reopened prosecution including the withdrawal of Finality of the Office action, mailed 4/23/03.

NEW MATTER

Claims 11, 13, 14, and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The rejection of claim 11 as containing NEW MATTER is maintained and reiterated from the previous office action, mailed 10/23/03. Applicant argues that the previous office action indicated the support of the "queuing at least a subset of the ESVDs by priority". In response, this is not agreed with. The previous office action, mailed 10/23/03, indicated that priority queuing is limited to ESVDs left over after the best possible ESVDs are actually pursued, or, alternatively, that only the inferior ESVDs

are queued after the best ESVDs are separately analyzed. The present form of claim 11 lacks a limitation of queuing either leftover ESVDs after the best possible are pursued or queuing only inferior ESVDs after the best ESVDs are separately analyzed. The “subset of ESVDs” limitation in claim 11 does not limit the subset to either said leftover or inferior ESVDs and therefore remains broader in scope than the written support as filed and sufficiently supports the maintaining and reiterating of this rejection.

The rejection of claims 13 and 14 as containing NEW MATTER is maintained and reiterated from the previous office action, mailed 10/23/03, regarding the configured table limitation. Applicant argues that the table in these claims is supported by what would be well known to the skilled artisan. In response this is a lack of written description rejection thus making what is well known to the skilled artisan an argument that is not directed to the basis of the rejection and therefore non-persuasive. The basis of the rejection is a lack of written description of the configured characteristic of a table and cannot be persuasively overcome by non-filed disclosure including what is well known to the skilled artisan. Applicant further argues that Figure 7 shows selected electronic state/valence distributions and is not a complete list. In response, this selected list is not cited nor pointed to by applicant as being configured to accept further items and fails to support the specific configured limitation of instant claims 13 and 14. The argument regarding “is not a complete list” lacks any indication or disclosure that the “selected” list of Figure 7 would, should, or even is characterized as being added to as configured therefor as cited in instant claims 13 and 14. Applicant lastly argues that there is nothing in the disclosure that indicates that additional elements cannot be

added to the table. In response, this argument is not directed to the rejection which is based on a lack of written basis for the table being specifically : The rejection of claim 11 as containing NEW MATTER is maintained and reiterated from the previous office action, mailed 10/23/03. Applicant argues that the “configured” to allow additional elements...to be added and thus non-persuasive.

The rejection of claim 16 as containing NEW MATTER is maintained and reiterated from the previous office action, mailed 10/23/03, as necessitated by amendment which has amended claim 16. Applicant argues that the amending of claim 16 now results in a practical limit that is not broad and generic. In response, applicant has not pointed to, nor has consideration of the instant disclosure as filed, written support for the amendments to claim 16 directed to “possible” or “neutral, non-radical” representation of the “most” chemical “structures”. In particular “possible” lacks written basis similar to “practical” as previously cited in the claim as not being disclosed additionally as to what defines what is, or is not, possible.

VAGUENESS AND INDEFINITENESS

Claims 10 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 is newly rejected due to the lack of antecedent basis for what is meant regarding “the most chemical structures” in the last line of claim 16. This phrase suggests some particular “most” such structures but nowhere neither in claim 16 nor in

claim 5 from which claim 16 depends is there antecedent basis as to what is meant for such “most” structures. Clarification via clearer claim wording is requested.

Claim 10 is newly rejection due to a lack of antecedent basis for the phrase “the Kekule structure representation” in the last line of claim 10 which indicates some particular representation previously in the claim. It is noted that the phrase “Kekule structure” was deleted in line 3 of claim 10 in a phrase directed to such a representation thus causing the lack of antecedent basis for the last line phrase. Clarification via clearer claim wording is requested.

The rejection of claim 10 is maintained and reiterated from the previous office action, mailed 10/23/03, due to its continued citation of “Kekule structure” in its last line. The unclarity of the metes and bounds of this type of structure was described as the basis for this rejection in said previous office action. Applicant argues that the claim amending has removed this unclarity. It is apparent that most of the citations to “Kekule structure have been removed via amendment but not that in claim 10 which still is therefore deemed to be vague and indefinite on the above basis due to yet containing the unclear phrase. Clarification via clearer claim wording is requested.

NON-STATUTORY SUBJECT MATTER

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 5-16 and 19-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The rejection of claims 5-16, 19, and 20 is maintained and reiterated from the previous office action, mailed 10/23/03. Applicant argues that the claimed invention is directed to useful results. In response, this rejection is not a lack of utility rejection but rather a rejection based on claiming non-statutory subject matter as previously set forth. The argument therefore that the production of fixed bond information is useful is not directed to the basis of the rejection and therefore non-persuasive.

Instant claim 21 is newly rejected hereinunder due to reconsideration of the "Computer-Related Inventions" section of the MPEP at section 2106, Part IV, subpart B, has revealed that instant claim 21 is directed to non-statutory subject matter without requiring performance of a result outside of a computer. Thus, the manipulation of data or conversion of data, in this case chemical bonding structure information is the claimed subject matter without any physical transformation outside of a computer. It is noted that the presently presented last line of instant claim 21 cites producing fixed bond information but without requiring any outside of the computer output. For example, it is well known that a software program may output information to a computer file and not display it, for example, outside of the computer.

The above instant claims also lack statutory subject matter due to being directed to nonfunctional descriptive material since the claims lack performance or control of a physical transformation. The presence of such nonfunctional descriptive material on a computer medium or in a computer system does not prevent this rejection because such nonfunctional descriptive material lacks the implementation of physical functionality regarding such computer elements. Additionally, applicant(s) may wish to

argue that the methods are directed to a practical utility. Consideration of the MPEP at section 2106, Part IV, subpart B, sub-subpart 2, reveals that such practical utility requires the production of a useful, concrete, and tangible result which is reasonably interpreted as at least some physicality of result as required for statutory subject matter. Methods per se, whether stored on a computer medium or in software, as instantly claimed subject matter is reasonably deemed a manipulation of data for such methods, without any physicality, that is, concrete or tangible, requirement. It is noted that the practical utility requirement is directed to a required combination of a useful, concrete, and tangible result which supports this rejection if only one or more of these criteria fail to be met in the claimed subject matter.

PRIOR ART

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 5, 11, 15, and 20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Graovac et al. [JACS 95(19): 6267-6273 (1973)].

This rejection is maintained and reiterated from the previous office action, mailed 10/23/03, and as necessitated by amendment. Applicant argues that the bonding structures in Graovac et al. only depict the conventional fixed bond representations and are only applicable to cyclic systems and all-carbon systems. In response, it is not agreed with that only fixed bond representations are analyzed in the reference because

non-fixed bond representations are depicted in Figures 1 and 2. No instantly disclosed definition of what is meant by “delocalized structure representation” as in the instant claims has been found to distinguish over the representations shown in said Figures 1 and 2 of the reference. These Figures are pointed to regarding delocalized structures as now presented in the instant claims. Such delocalized structures are reasonably interpreted to include chemical structures without localized fixed (conventional) bonds. Such non-fixed bond representations are shown in Figures 1 and 2 and analyzed and evaluated (instant claim 5, line 6, for example) regarding Kekule index contributions for the calculation of structures as numerously depicted throughout the reference. The argument regarding applicability of the reference to cyclic systems and all-carbon systems is also non-persuasive because instant claim 5 is directed to polycyclic ring systems and are not limited so as to exclude all-carbon systems thus including the systems of Graovac et al. Applicant further argues that there is no priority queuing in Table I but does not negate the cited priority index arrangement of Table I, second row of structures and thus is a non-persuasive argument as setting forth an allegation which is contrary to the factual basis for the rejection as pointed to in the reference.

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the Central PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The Central PTO Fax Center number is (703) 872-9306.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ardin Marschel, Ph.D., whose telephone number is

Art Unit: 1631

(571) 272-0718. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (571) 272-0722.

Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instrument Examiner, Tina Plunkett, whose telephone number is (571) 272-0549.

May 24, 2004

Ardin H. Marschel 5/27/04
ARDIN H. MARSCHEL
PRIMARY EXAMINER